The Manufacture Of Sulfuric Acid And Superphosphate

More sulfuric acid is produced every year than any other chemical. It has a wide range of uses including phosphate fertilizer production, explosives, glue, wood preservatives, and lead-acid batteries. It is also a particularily corrosive and dangerous acid, with extreme environmental and health hazards if not manufactured, used, and regulated properly. Sulfuric Acid Manufacture: Analysis, Control and Optimization keeps the important topics of safety and regulation at the forefront as it overviews and analyzes the process of sulfuric acid manufacture. The first nine chapters focus on the chemical plant processes involved in industrial acidmaking, with considerable data input from the authors' industrial colleagues. The last 15 chapters are dedicated to the mathematical analysis of acidmaking. Both Authors bring years of hands-on knowledge and experience to the work, making it an exceptional reference for anyone involved in sulfuric acid research and/or manufacture. * Only book to examine the processes of sulfuric acid manufacture from an industrial plant standpoint as well as mathematical. * Draws on the industrial connections of the authors, through their years of hands-on experience in sulfuric acid manufacture. * A considerable amount of industrial plant data is presented to support the text.

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This critical volume provides practical insights on sulfuric acid and related plant design and on techniques to improve and enhance substantially the efficiency of an existing plant by means of small modifications. The book provides readers with a better understanding of the state-of-art in sulfuric acid manufacture as well as, importantly, in the manufacture of value-added products based on sulfur that are also associated with the manufacture of sulfuric acid. Overall, engineers and plant managers will be introduced to technologies for making their sulfuric acid enterprises more productive, remunerative, and environmentally friendly. A Practical Guide to the Manufacture of Sulfuric Acid, Oleums, and Sulfonating Agents covers sulfuric acid and derivative chemical plant details from the nuts-and-bolts level to a holistic perspective based on actual field experience. The book is indispensable to anyone involved in implementing a sulfuric acid or related chemical plant.

By some measure the most widely produced chemical in the world today, sulfuric acid has an extraordinary range of modern uses, including phosphate fertilizer production, explosives, glue, wood preservative and lead-acid batteries. An

exceptionally corrosive and dangerous acid, production of sulfuric acid requires stringent adherence to environmental regulatory guidance within cost-efficient standards of production. This work provides an experience-based review of how sulfuric acid plants work, how they should be designed and how they should be operated for maximum sulfur capture and minimum environmental impact. Using a combination of practical experience and deep physical analysis, Davenport and King review sulfur manufacturing in the contemporary world where regulatory guidance is becoming ever tighter (and where new processes are being required to meet them), and where water consumption and energy considerations are being brought to bear on sulfuric acid plant operations. This 2e will examine in particular newly developed acid-making processes and new methods of minimizing unwanted sulfur emissions. The target readers are recently graduated science and engineering students who are entering the chemical industry and experienced professionals within chemical plant design companies, chemical plant production companies, sulfuric acid recycling companies and sulfuric acid users. They will use the book to design, control, optimize and operate sulfuric acid plants around the world. Unique mathematical analysis of sulfuric acid manufacturing processes, providing a sound basis for optimizing sulfuric acid

manufacturing processes. Analysis of recently developed sulfuric acid manufacturing techniques suggests advantages and disadvantages of the new processes from the energy and environmental points of view. Analysis of tail gas sulfur capture processes indicates the best way to combine sulfuric acid making and tailgas sulfur-capture processes from the energy and environmental points of view. Draws on industrial connections of the authors through years of hands-on experience in sulfuric acid manufacture.

Nach reiflicher Überlegung haben sich Verlag und Herausgeber entschlossen, dem 1930 in Braunschweig bzw. 1946 in Ann Arbor erschienenen "Handbuch der Schwefelsäurefabrikation", das sich noch eng an die Lungesehe Tradition anlehnte, einen Ergänzungsband in Form einer selbständigen Kurzausgabe fol gen zu lassen, um damit den Wünschen der technischen Praxis, der Patent ämter und des Nachwuchses zu entsprechen. Die einzelnen Kapitel gehen so weit angebracht von einer kurzen Zusammenfassung des älteren Materials aus, um dann den neuesten Stand zu schildern. Wegen der hohen Bedeutung der Kontaktverfahren ist das 8. Kapitel etwas ausführlicher gehalten. Die drei sprachige Fassung des 2. Kapitels (Patentliteratur nach dem Stande von 1959/ 1960) und ein Anhang mit Firmenhinweisen kommen bei der internationalen Verbreitung des

Hauptwerkes verständlichen Wünschen aus dem Leserkreis entgegen. Trotz ihres hohen Alters sind in der Schwefelsäureindustrie viele Dinge wissen schaftlicher, technischer und wirtschaftlicher Art noch in erfreulicher Entwick lung begriffen, zu deren weiterer Förderung der vorliegende Band genau so beitragen möchte, wie das beim Hauptwerk der Fall gewesen ist. Der Herausgeber dankt seinen Mitarbeitern und Helfern, die sich trotz starker beruflicher Inanspruchnahme der mühevollen Abfassung ihrer Beiträge unter zogen haben. Er dankt weiter_ den zahlreichen beteiligten Firmen sowie allen Fachleuten und Stellen, einschließlich des Gmelin-Instituts, die ihn jederzeit voll unterstützt haben. Er dankt auch der tätigen Förderung durch den Verlag und wünscht dem Werk viel Glück auf dem Weg durch die Welt.

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